

Low-Cost Options for Moderate Levels of Mercury Control

Quarterly Progress Report
Reporting Period: January 1, 2005–March 31, 2005

Principal Author:
David C. Muggli

ADA-ES, Inc.
8100 SouthPark Way, Unit B
Littleton, Colorado 80120

Submitted: April 27, 2005

DOE Cooperative Agreement No.: DE-FC26-05NT42307

Report No. 42307R01

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
RESULTS OF WORK.....	2
Approach	2
Results and Discussion.....	2
Conclusion	3
MILESTONES NOT MET	4
COST AND SCHEDULE STATUS	4
SUMMARY OF SIGNIFICANT ACCOMPLISHMENTS	4
ACTUAL OR ANTICIPATED PROBLEMS OR DELAYS.....	4
DESCRIPTION OF TECHNOLOGY TRANSFER ACTIVITIES	4
APPENDIX.....	5

EXECUTIVE SUMMARY

The U.S. Department of Energy (DOE) Cooperative Agreement number DE-FC26-05NT42307 “Low-Cost Options for Moderate Levels of Mercury Control,” covers an award for funding a project that will investigate and test the Electric Power Research Institute’s (EPRI) patented TOXECON™ II process on two cold-side precipitator-equipped plants, and investigate and test the use of high-temperature sorbents on two hot-side precipitator-equipped plants. The DOE made this award through the National Energy Technology Laboratory (NETL) on February 17, 2005.

This reports covers the initial project activities for the first quarter of 2005 from February 17, 2005 (project award), to March 31, 2005, as well as the authorized precontract award efforts.

During this period, project participants engineered outage-related plant modifications for two plants and installed the modifications on one plant. In addition, ADA-ES began work on preparing the project detailed schedule and solicited additional project cost-share participants. EPRI began efforts to put in place the cost-share agreements with committed EPRI members.

DOE held the project kickoff meeting at the NETL facility in Pittsburgh, Pennsylvania.

RESULTS OF WORK

Approach

This period covers the pre-award work and the initial project setup activities including preliminary work at two plants, particularly work required to take advantage of scheduled plant outages. DOE made the official project award to ADA-ES, Inc., on February 17, 2005.

The approach for this first partial quarter was to prepare a project schedule that outlines the major activities for the overall project as well as a sub-schedule for each site that identifies the specific tasks for that site, based on the task breakdown outlined in the Cooperative Agreement. The first level of effort for the schedule was to prepare a high-level schedule for the overall project and for each host site that identified the major activities and the interdependencies of the activities and the anticipated durations for each activity. As the task details for each site become known, the activity list for that site will be expanded and the schedule refined.

Concurrent with the scheduling activities, we had discussions with the host sites to determine the plant outage schedule and identify the periods of time where we would need to install equipment that required an outage for installation.

Results and Discussion

As a result of reviewing the plant outages for the host sites, we determined that MidAmerican Energy Company's Council Bluffs Unit 2 and Entergy Corporation's Independence Unit 2 outage schedules would require immediate efforts to take advantage of scheduled outages for the installation of outage-related equipment.

MidAmerican Council Bluffs Unit 2 is a test site for high-temperature sorbents. This unit has a hot-side precipitator, and the testing will involve injecting sorbents upstream of the precipitator and measuring the removal across the precipitator. We also anticipate injecting sorbents in the heat recovery area of the boiler.

At this site, we inspected the existing ductwork for suitability for reagent injection and the location of existing test ports. We determined that the ports on the precipitator outlet are adequate for the testing efforts, but the ports on the inlet would not accommodate the reagent injection. We also determined that the ports in the boiler heat recovery area are adequate for the anticipated testing efforts.

We coordinated with the plant for a contractor to install the additional required ports for reagent injection.

Entergy Independence Unit 2 is a test site for TOXECON™ II testing. This unit has a cold-side precipitator consisting of four identical precipitator enclosures (boxes) in a 2-by-2 stacked arrangement. Each precipitator is four fields wide by four fields deep. The TOXECON™ II configuration consists of injecting reagent upstream of the latter fields of

the precipitator, thereby not contaminating the ash collected from the upstream fields with injected reagent.

After inspecting the unit and reviewing the precipitator and ductwork drawings, we determined that we would test on one-half of one enclosure, and that there were sufficient test ports available for the testing instrumentation. We also decided that we would inject reagent between the second and third fields and the third and fourth fields to evaluate the effect of residence time in the precipitator on mercury removal.

We prepared design drawings for the injection grids based on the ADA-ES experience at Great River Energy's Coal Creek Station and adjusted the injection pattern to work around the internal structural steel between the precipitator fields. We then met with plant personnel and a representative from the installation contractor to review the design, based on an internal inspection of the Entergy Independence Unit 1 precipitator, which is identical to Unit 2. Based on that inspection, we modified the design slightly and issued the injection grid drawings for construction on March 31, 2005, for installation during the week of April 18, 2005.

Other activities during this period included participating in and presenting at the DOE NETL project kickoff meeting in Pittsburgh, Pennsylvania. ADA-ES presented an overall project technical overview as well as an overview of the financial and contractual project considerations.

At this meeting, American Electric Power (AEP), who had offered one of their Gavin Plant's units as one of the potential test sites, indicated that Gavin may not be a highly desirable site and requested further discussion about possible alternate sites for the TOXECON™ II demonstration. These discussions are ongoing.

ADA-ES is working on developing the overall project schedule as well as the detailed schedule for Entergy Independence and plans to issue the first project schedule Gantt chart to DOE on April 4, 2005.

ADA-ES also developed a list of additional potential project cost-share participants and sent an inquiry letter to the potential participants in mid-February. ADA-ES received a commitment from Arch Coal, Inc., for project cost-share funds.

EPRI is involved with arranging cost-share payments for all of the host sites and for other parties who have interest in the project. In addition to the host site utilities, we have received commitments for project cost-share funds from Southern Company, DTE Energy, Oglethorpe Power Corporation, and Dynegy.

Conclusion

Overall, the project has successfully started and is progressing on schedule with no known concerns.

MILESTONES NOT MET

None.

COST AND SCHEDULE STATUS

See form SF-269A included in the appendix. Also included in the appendix is a project schedule.

SUMMARY OF SIGNIFICANT ACCOMPLISHMENTS

1. MidAmerican Council Bluffs installed the injection ports at the inlet of the Unit 2 hot-side precipitator.
2. ADA-ES issued the injection grid drawings to Entergy for the installation of the injection grids at the Independence Station Unit 2.
3. DOE NETL held the project kickoff meeting at their facility in Pittsburgh, Pennsylvania.
4. ADA-ES began preparation of the project Gantt chart schedule.
5. EPRI began to put the cost-share agreements in place with the committed member utilities.

ACTUAL OR ANTICIPATED PROBLEMS OR DELAYS

None.

DESCRIPTION OF TECHNOLOGY TRANSFER ACTIVITIES

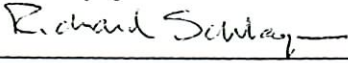
A project kickoff meeting was held at DOE NETL (Pittsburgh, Pennsylvania) on March 16, 2005

APPENDIX

FINANCIAL STATUS REPORT

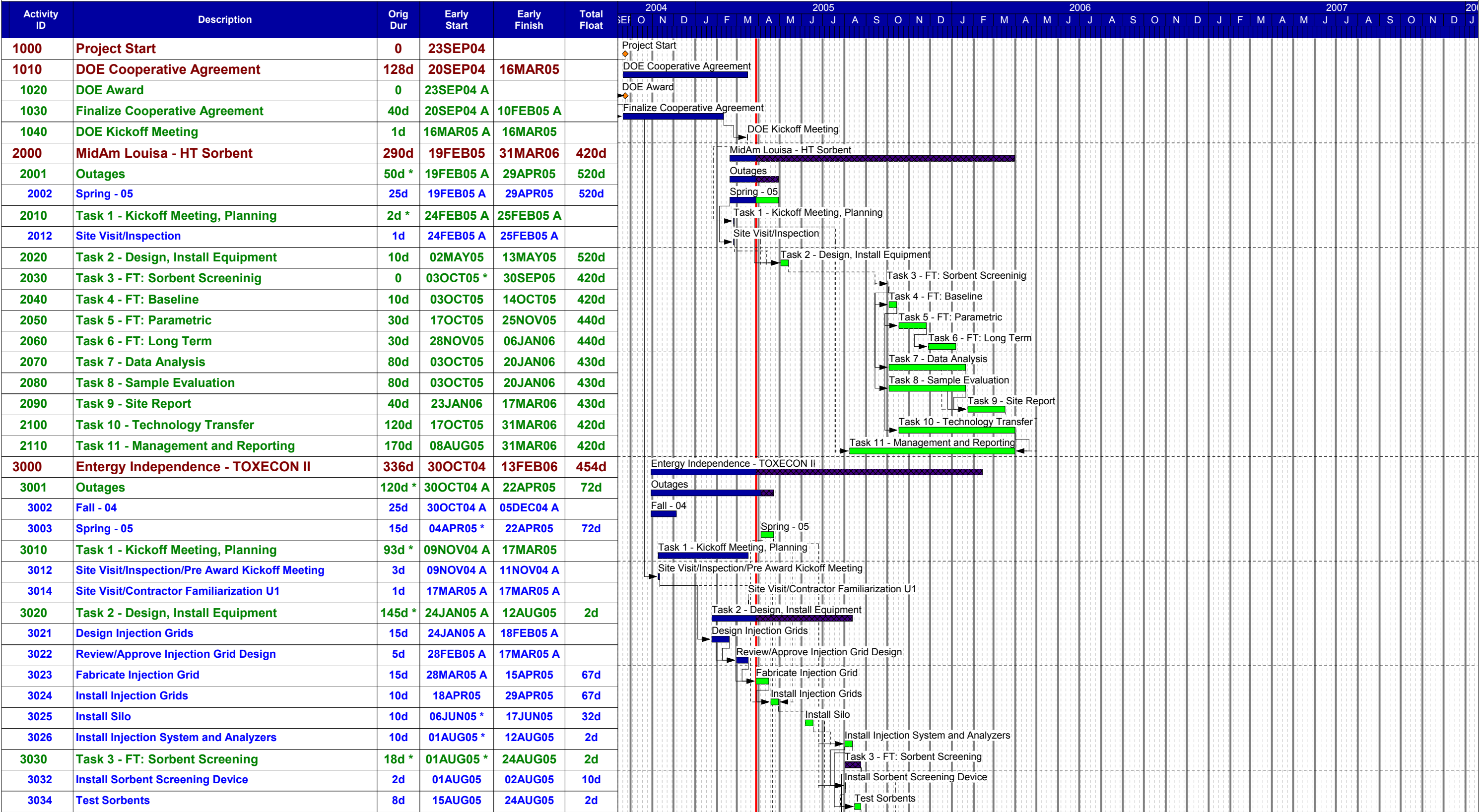
(Short Form)

(Follow instructions on the back)

1. Federal Agency and Organizational Element to Which Report is Submitted DOE/NETL		2. Federal Grant or Other Identifying Number Assigned By Federal Agency DE-FC26-05NT42307		OMB Approval No. 0348-0039	Page 1	of 2 pages			
3. Recipient Organization (Name and complete address, including ZIP code) ADA-ES, Inc. 8100 SouthPark Way Unit B Littleton, CO 80120									
4. Employer Identification Number 84-1341182		5. Recipient Account Number or Identifying Number		6. Final Report <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		7. Basis <input type="checkbox"/> Cash <input checked="" type="checkbox"/> Accrual			
8. Funding/Grant Period (See Instructions) From: (Month, Day, Year) 02/10/2005		To: (Month, Day, Year) 02/09/2008		9. Period Covered by this Report From: (Month, Day, Year) 02/10/2005		To: (Month, Day, Year) 03/31/2005			
10. Transactions:				I Previously Reported		II This Period		III Cumulative	
a. Total outlays				0.00		79,411.63		79,411.63	
b. Recipient share of outlays				0.00		21,917.61		21,917.61	
c. Federal share of outlays				0.00		57,494.02		57,494.02	
d. Total unliquidated obligations								0.00	
e. Recipient share of unliquidated obligations								0.00	
f. Federal share of unliquidated obligations								0.00	
g. Total Federal share (Sum of lines c and f)								57,494.02	
h. Total Federal funds authorized for this funding period								3,946,323.00	
i. Unobligated balance of Federal funds (Line h minus line g)								3,888,828.98	
11. Indirect Expense		a. Type of Rate (Place "X" in appropriate box) <input checked="" type="checkbox"/> Provisional <input type="checkbox"/> Predetermined <input type="checkbox"/> Final <input type="checkbox"/> Fixed							
		b. Rate 117.80%		c. Base \$22,935.52		d. Total Amount \$27,018.04		e. Federal Share \$19,561.06	
12. Remarks: Attach any explanations deemed necessary or information required by Federal sponsoring agency in compliance with governing legislation.									
13. Certification: I certify to the best of my knowledge and belief that this report is correct and complete and that all outlays and unliquidated obligations are for the purposes set forth in the award documents.									
Typed or Printed Name and Title Richard Schlager, Vice President					Telephone (Area code, number and extension) (303) 734-1727				
Signature of Authorized Certifying Official 					Date Report Submitted 4-19-05				

Project Schedule

Project Manager - Dave Muggli



Project Schedule

Project Manager - Dave Muggli

[illegible]

Data date	28MAR05
Run date	04APR05
© Primavera Systems, Inc.	

ADA-ES
7007 - DOE - HT Sorbents/Toxecon II
Page 2A



